



U.S. Department of Commerce
BUREAU OF THE CENSUS



Titanium Mill Products, Ingot, and Castings

JANUARY 1984

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The statistics in this publication are based on a survey of manufacturers and represent total U.S. shipments of titanium mill products, ingot, and castings. Estimates are included for

companies whose reports were not received in time for tabulation. A description of the survey methodology and related information appears on page 3.

Table 1. NET SHIPMENTS OF TITANIUM MILL PRODUCTS

(Thousands of pounds)

Product description	January 1984	December 1983	January 1983
Total ¹	3,207	2,903	3,061
Sheet and strip.....	(2)	(2)	(2)
Plate.....			
Forging and extrusion billet.....	1,776	1,393	1,688
Rod and bar.....	351	454	238
Fastener stock and wire.....			
Extrusion.....	2,1,080	2,1,056	2,1,135
Pipe and tubing.....			
Other.....			

¹Net shipments is the sum of mill product shipments plus mill products consumed in the manufacture of fabricated products, less total receipts.

²Data for sheet and strip, plate, extrusion (other than tubing), pipe and tubing, and other have been combined to avoid disclosing individual company data.

Table 2. TITANIUM INGOT, MILL PRODUCTS, AND CASTINGS: 1984 AND 1983

(Thousands of pounds)

Month and year	Ingot					Mill products			Castings	
	Production	Consumption	Shipments	Receipts	Ending inventories	Production	Receipts	Net shipments ^{1,2}	Production	Shipments
1984										
January.....	5,846	5,464	1,229	2,166	7,488	3,283	301	3,207	111	27
1983										
Total ¹	52,878	52,465	10,884	11,345	(X)	34,647	4,143	31,866	1,005	488
December.....	5,754	4,942	7,807	859	6,546	3,119	430	2,903	103	139
November.....	4,745	4,770	968	994	5,523	2,864	360	2,547	77	44
October.....	4,799	5,068	873	890	5,472	3,020	314	2,656	75	29
September.....	5,045	5,372	950	950	5,527	3,546	735	3,050	85	35
August.....	4,361	4,814	805	961	5,920	2,845	432	2,437	71	32
July.....	4,148	3,608	867	1,141	5,994	2,577	314	2,287	48	29
June.....	5,048	5,168	945	924	5,052	3,132	355	2,642	84	41
May.....	3,769	3,665	1,002	968	5,221	3,021	422	2,691	81	47
April.....	3,657	3,446	918	746	5,141	2,567	198	2,479	94	42
March.....	4,310	4,354	1,151	1,181	5,017	2,887	191	2,876	100	55
February.....	3,698	3,560	977	839	5,020	2,418	224	2,633	104	61
January.....	3,544	3,698	621	892	4,938	2,651	168	2,665	83	34

¹Revised by 5 percent or more from previously published figures.

(X) Not applicable.

²See table 1 for more detailed data.

²Net shipments is the sum of mill product shipments plus mill products consumed in the manufacture of fabricated products, less total receipts.

³Inventories for the year are those shown for December.

Address inquiries concerning these figures to the U.S. Department of Commerce, Bureau of Industrial Economics, Materials Division, Washington, D.C. 20230, or to the Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Nathaniel Shelton, (301) 763-2529.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Table 3. NET SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM MILL PRODUCTS: 1984 AND 1983

(Quantity in thousands of pounds; value in thousands of dollars)

Month and year	Manufacturers' net shipments (quantity)	Exports of domestic merchandise ²			Percent exports to manufacturers' net shipments (quantity)	Imports for consumption ⁴		Apparent consumption ⁵ (quantity)	Percent imports to apparent consumption (quantity)
		Quantity	Value at port	Estimated producers' value ³		Quantity	Value ⁵		
JANUARY 1984									
Titanium ingot and Forging and extrusion billet ⁶	4,252	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Titanium mill products	2,921	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Titanium mill products	1,431	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
DECEMBER 1983									
Total	3,710	753	9,600	9,332	5	129	1,134	3,086	4
Titanium ingot and forging and extrusion billet ⁶	2,200	240	2,118	2,425	10	1	17	1,961	(Z)
Titanium mill products	1,510	513	7,172	6,907	7	128	1,117	1,125	11
1983									
Total	42,788	4,307	52,199	50,699	10	2,033	18,276	40,314	5
Titanium ingot and forging and extrusion billet ⁶	26,089	2,740	29,734	28,425	11	161	1,443	23,510	1
Titanium mill products	16,699	1,567	22,965	22,274	9	1,872	16,833	17,004	11

(NA) Not available. (Z) Less than one-half of 1 percent.

¹For a comparison of Standard Industrial Classification (SIC) codes, Schedule 8 export numbers, and TSUSA import numbers, see table 4.²Exports: Bureau of the Census report IM 145-X, U.S. Exports for Consumption and General Imports.³These values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors are based on data for 1981 which are published in *Origin of Exports of Manufactured Products*, H81(A8)-5, appendix B. Comparable adjustment factors for earlier years are based on similar factors developed for 1971 and 1972. The current adjustment factor for this report is 0.9731.⁴Source: Bureau of the Census report IM 145-X, U.S. Exports for Consumption and General Imports.⁵The value includes c.i.f. (cost, insurance, and freight) at the first port of entry in the United States plus U.S. import duties and other charges to the import point.⁶Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.⁷For comparability of output, export, and import classifications for ingot and billet, assume that bloom, sheet bar, and slab are reported as ingot or billet in the output numbers. Figures for imports of ingot and billet also include powder, crystal, and similar forms which are excluded from the output and export numbers.

Table 4. COMPARISON OF STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES, SCHEDULE 8 EXPORT NUMBERS AND TSUSA IMPORT NUMBERS: 1984

Product code	Product description	Export number	Product description	Import number	Product description
33562 74 ¹	Titanium ingots and forgings and extrusion billet ²	630,6520	Titanium ingots, billets, blooms, sheet bar and slabs	2629,1460	Unwrought titanium
33562 79	Titanium mill products	630,6570	Wrought titanium metal, including alloys (excludes sponge, ingots, billets, blooms, sheet bars, slabs, waste, and scrap)	2629,2000	Wrought titanium metal, including alloys (excludes waste, scrap, and unwrought metal)

¹For comparability of output, export, and import classification for ingot and billet, assume that bloom, sheet bar, and slab are reported as ingot or billet in the output numbers.²Figures for imports of ingot and billet also include powder, crystals, and similar primary forms which are excluded from the output and export numbers.

DESCRIPTION OF SURVEY

Scope of Survey—This survey covers companies engaged in producing titanium ingot, mill products, and castings.

Survey Methodology—The statistics in this publication are collected by mail on Bureau of the Census monthly Form ITA-991, Titanium Metal. The panel for this survey includes all known producers of titanium ingot, mill products, and castings, approximately 30 companies.

Survey Error—Figures for the current month include estimates for panel members for which reports were not received in time for tabulation. Such missing figures are "imputed" based on month-to-month movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is not precisely known but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

Revision to Previous Period Data—Statistics for previous months may be revised due to receipt of corrected data from respondents, including the receipt of late reports for which estimates were previously made as described above, and other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

EXPLANATION OF TERMS

Gross Shipments of Mill Products—Represents mill shapes shipped between producers plus mill shapes consumed in the production of fabricated products such as forgings.

Net Shipments of Mill Products—Represents gross shipments less receipts. For detail categories, net shipments also include consumption in the manufacture of other mill shapes.

COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Aside from the differences in the basic commodity

classifications, there are additional problems involving import data, since there are a substantial number of imported commodities which are not produced in the United States or which are produced only in very small quantities and which, therefore, have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above, there are also the following problems affecting the comparability of the three sets of data.

Valuation—There are different methods of valuation for the three types of data:

Domestic Output—Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.

Exports—Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance, and other charges to the export point.

Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

Imports—Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

Duplication in Quantity and Value of Output—Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

Estimated Low-Valued Export and Import Transactions—The import statistics include estimated value data for shipments valued under \$251. Effective August 1982, value data for shipments valued under \$251 are estimated from factors based on the ratios of under \$251 shipments to individual country totals. Prior to August 1982, estimates were based on a 1-percent sample of documents for shipments valued under \$251. Effective with the statistics for March 1979, the lower limit of the value ranges for estimating data for low-value export shipments was raised from \$251 to \$501. Effective July 1981, the statistics for countries other than Canada reflect fully compiled data for shipments valued over \$500. Prior to July 1981, these data were fully compiled only for shipments valued \$1,000 and over, while shipments valued \$501 to \$999 were estimated, based on a 50 percent sample.

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Manufacturers' Shipments, Not Specified by Kind—The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

Time Lag Between Output and Exports—There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

"Direct" vs "Total" Commodity Exports and Imports—Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

Used Commodities—With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

Geographic Area of Coverage—Import and export data reflect the movement of merchandise into and out of U.S. foreign trade zones, the U.S. Virgin Islands, and the U.S. customs territory (includes the 50 States, the District of Columbia, and Puerto Rico).

RELATED REPORTS

An annual Current Industrial Report also is published in this series. The annual report summarizes monthly figures and incorporates known revisions for both current and previous year. It also provides a single reference copy to replace the monthly publications.

The Bureau of the Census publishes the following related reports:

Series	Frequency	Title
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Current Industrial Reports

M33-2	Monthly	Aluminum Ingot and Mill Products
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Series	Frequency	Title
M33A	Monthly	Iron and Steel Castings
M33E	Monthly	Nonferrous Castings
MA33B	Annually	Steel Mill Products
MA33G	Annually	Magnesium Mill Products

Other Industry Reports

M3-1	Monthly	Manufacturers' Shipments, Inventories, and Orders
(AS)	Annually	Annual Survey of Manufactures (ASM)
(MC)	Quinquennially	Census of Manufactures

Foreign Trade Reports

EM 546	Monthly	U.S. Exports
IM 145 X	Monthly	U.S. Imports for Consumption and General Imports

CONTACTS FOR DATA USERS

Subject Area	Contact	Phone Number
Current Industrial Report ITA991	Nathaniel Shelton	(301) 763-5547
Manufacturers' Shipments Inventories, and Orders	Kathleen Menth	(301) 763-2575
Census/ASM	Dale Gordon	(301) 763-7304
To order a Census Bureau publication	Customer Services (DUSD)	(301) 763-4100
Foreign Trade publication	Juanita Noone	(301) 763-5140
Bureau of Industrial Economics	James Manion	(202) 377-5157